

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Takagi et al.	Docket No.:	AM100246-00
Application No.:	10/019,481	Examiner:	LEVY
Filed:	4/4/2002	Art Unit:	1615
Customer No.:	26474	Confirmation No.:	1417

For: Ant controllers and method for application thereof

Honorable Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

REPLY BRIEF UNDER 37 C.F.R. §41.41

Sir:

This is a Reply Brief to the Examiner's Answer of February 02, 2009. Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees, to Deposit Account 14.1437. Please credit any excess fees to such account.

Status of Claims

Claims 1, 10 and 13 – 47 are pending in the application. Claims 1, 10 and 13 – 47 are rejected. Claims 1, 10 and 13 – 47 are being appealed. No claims are allowed or confirmed. Claims 1, 10 and 13 – 47 are subject to restriction and/or election requirement. No claims are withdrawn. No claims are objected to. Claims 2 – 9, 11 and 12 are canceled.

Grounds of Rejection to be Reviewed on Appeal

- I. Appellants respectfully request review of whether the Examiner erred by rejecting claims 1, 13 – 16, 18 – 47 under 35 U.S.C. §102 (e) over US 6,342,518 to Treacy et al. (hereinafter, “Treacy”).
- II. Appellants respectfully request review of whether the Examiner erred by rejecting claims 1, 10, 13 – 47 under 35 U.S.C §103(a) over Stefferud, ed., INSECTS – the year book of agriculture, p. 469, (1952) (hereinafter, “Stefferud”), US 5,543,573 to Takagi et al. (hereinafter, “Takagi”).

Withdrawn Rejections

Appellants respectfully note the Examiner’s Answer indicates some rejections have been withdrawn. The rejection of claims 1, 10, and 13 – 47 under 35 U.S.C. §102 (a) over Treacy has been withdrawn. The rejection of claims 1, 10, 13 – 47 under 35 U.S.C §103(a) over Treacy, Takagi, and Stefferud has been withdrawn.

Arguments

I. Appellants respectfully submit Treacy does not anticipate claims 1, 13 – 16, 18 – 47, because an effective amount of a hydrazine compound of formula (I-1) for controlling a pest selected from the *Isoptera*, *Hymenoptera*, *Orthoptera*, and *Psocoptera* orders. Appellants respectfully reassert the remarks made in the Brief on Appeal, and further submit the following remarks in response to the Examiner’s Answer mailed

February 02, 2009.

According to *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913 (Fed. Cir. 1989), the test for anticipation is one of identity which means that the identical invention must be shown in the reference in as complete detail as is contained in the claim. The structure of a compound and its properties are inseparable considerations. When it is necessary to select portions of teachings within a reference and combine them, anticipation can only be found if the classes of substituents are sufficiently limited or well delineated. *Ex parte A*, 17 USPQ2d 1716 (Bd. Pat. App. & Inter. 1990).

Treacy relates to a synergistic insecticidal composition comprising a neuronal sodium channel antagonist and an arylpyrrole insecticide. Treacy also describes methods for synergistic insect control and crop protection. Treacy defines the term “neuronal sodium channel antagonist” very broadly. At column 2, lines 1 – 10, Treacy explains the term designates a compound capable of preventing the ability of a neuron cell to transfer sodium ions across a cell membrane. Treacy provides several exemplary structures for neuronal sodium channel antagonist compounds. Using the present application as a guide, it is possible to select formula I from formulas I, II, III, IV, V, and VI, to substitute substituents X_m, R, w, R₁, Y_p, A, R₂, R₃, and Z_q, and to select an integer, n, so as to arrive at a hydrazine compound meeting the specific requirements of claim 1. However, such a hindsight reconstruction does not support a finding of anticipation.

Alleging no selection would be required to arrive at a composition meeting the specific requirements of claim 1, the Examiner’s Answer notes Example 1 of Treacy uses compound (Ia). Appellants agree that compound (Ia) falls within the definition of the hydrazine compound used in the method of claim 1. However, the Office action incorrectly asserts that Treacy describes compound (Ia) to be particularly preferred for all purposes. Treacy makes no such statement. Tables 1 and 2 of Treacy exemplify an amount of a compound of formula (Ia) that has an effect on Cotton Bollworm and on Tobacco Budworm, but not an amount that is effective for controlling a pest selected from the *Isoptera*, *Hymenoptera*, *Orthoptera* and *Psocoptera* orders. In other words, Example 1 only suggests that compound (Ia) would be a suitable selection from the enormous variety of potential neuronal sodium channel antagonists when the composition is intended to treat cotton bollworm or tobacco budworm, and provides no reasonable

technical basis to assume compound (Ia) is preferable for all purposes.

The Examiner's Answer cites column 7, lines 32 – 35 of Treacy, which explains that the Treacy composition may be useful in the prevention and control of public health pests such as houseflies, mosquitoes, cockroaches, ants, termites, or the like. First, appellants respectfully submit that this portion of Treacy does not disclose that the Treacy composition would be useful to treat the listed pests. Instead, this portion of Treacy merely suggests that the Treacy composition may be useful to treat the listed pests. More importantly, this portion of Treacy refers to the Treacy composition. As stated in column 1, lines 34 – 38, the Treacy composition comprises as essential active ingredients a synergistically effective amount of a neuronal sodium channel antagonist and an arylpyrrole insecticide. Treacy makes clear that both active ingredients are essential. Again, column 7, lines 32 – 35 refers to the Treacy composition and in no way suggests that it would even be possible to apply an effective amount of a neuronal sodium channel antagonist alone, or an effective amount of an arylpyrrole insecticide alone. Treacy only suggests that a composition comprising both essential active ingredients may have potential use in the prevention and control of public health pests such as houseflies, mosquitoes, cockroaches, ants, termites, or the like.

According to *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913 (Fed. Cir. 1989), the test for anticipation is one of identity which means that the identical invention must be shown in the reference in as complete detail as is contained in the claim. Treacy does not disclose an amount of a compound of the formula (Ia) that is effective for controlling a pest selected from the *Isoptera*, *Hymenoptera*, *Orthoptera* and *Psocoptera* orders. Therefore, Treacy does not anticipate the present invention.

Additionally, Treacy does not limit or delineate the classes of substituents with respect to controlling a pest selected from the *Isoptera*, *Hymenoptera*, *Orthoptera*, and *Psocoptera* orders. At the time the present invention was made, a person having ordinary skill in the art, seeking to control a pest selected from the *Isoptera*, *Hymenoptera*, *Orthoptera* and *Psocoptera* orders, had no reasonable technical basis to focus on compound (Ia). Appellants respectfully submit Treacy does not anticipate claims 1, 13 – 16, 18 – 47, and request that the present rejection be reversed.

II. Appellants respectfully submit claims 1, 10, 13 – 47 are not obvious over Stefferud, and Takagi for the reasons stated in the Brief on Appeal. Appellants respectfully submit the following remarks in response to the Examiner's Answer mailed February 02, 2009.

It is respectfully noted that 35 U.S.C §103(a) states, “[p]atentability shall not be negated by the manner in which the invention was made.” The present inventors discovered through extensive studies, that a hydrazine compound of formula (I-1) could be used to control the specific pests targeted by the present invention. The inventors further discovered what constitutes an effective amount of a hydrazine compound of formula (I-1) to control the specific pests targeted by the present invention. Prior to those extensive studies, persons having ordinary skill in the art could not have predicted whether the claimed method would or would not be successful.

As expressed by the U.S. Supreme Court, “[t]he rationale to support a conclusion that the claim would have been obvious is that all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination yielded nothing more than predictable results to one of ordinary skill in the art.”¹ At the time the present invention was made, a person having ordinary skill in the art had no reasonable technical basis on which to predict that the hydrazine compound disclosed by Takagi would have an insecticidal effect on all the insects labeled by Stefferud as “household insects.”

Takagi merely discloses the use of a broad range of hydrazinecarboxamides against various insect pests (See column 62, lines 6 to 67). The reference states that “[t]he insecticides are markedly effective particularly against insect pests belonging to LEPIDOPTERA, and COLEOPTERA and the like.”² As explained in the Declaration of Dr. Hassan Oloumi-Sadeghi, filed on April 11, 2006, Takagi was unsuited to suggest the methods of the present application, because: the reference merely discloses

¹ MPEP §2143, citing *KSR*, 550 U.S. at ___, 82 USPQ2d at 1395; *Sakraida v. AG Pro, Inc.*, 425 U.S. 273, 282, 189 USPQ 449, 453 (1976); *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57, 62-63, 163 USPQ 673, 675 (1969); *Great Atlantic & P. Tea Co. v. Supermarket Equipment Corp.*, 340 U.S. 147, 152, 87 USPQ 303, 306 (1950) (emphasis added).

² Column 62, line 67 to column 63, line 2 of US 5,543,573.

hydrazinecarboxamide derivatives which are generic to the hydrazine compound of the present claims (formula I-1), and the reference's teaching with regard to the insecticidal activity of the generic compounds was too general to suggest that any particular group of compounds within the genus exhibit noteworthy effects on specific pests.

As stated on page 5 of the Declaration, in order to illustrate the particular and unexpected advantage which is achieved in accordance with the methods defined in the claims of application Serial No. 10/019,481 tests were carried out, using Example no. 44 as a representative of the compounds (I-1) of the present invention, and using compound A007 of Takagi. Compound A007 was selected because Takagi teaches that it exhibited 100% mortality in each of the described investigations.

Appellants respectfully submit that the results presented in the declaration are commensurate in scope with the claimed invention. As shown on page 6 of the declaration, the inventive compound and the Takagi compound differ only in what the present claims label the "Y" substituent. According to independent claims 1, 15, and 16, Y represents 1 to 5 same or different substituents selected from the group consisting of nitro and cyano. Nitro and cyano groups are sufficiently similar to enable a person having ordinary skill in the art to extend the showing for a cyano group to a nitro group. Dependent claims 22, 32, and 42 require Y to be cyano.

Tests of the two compounds were carried out against ants (pages 6 – 7 of the Declaration). The activity of the two compounds was evaluated via forced exposure soil contact bioassays. The following table summarizes the results obtained in the forced exposure soil contact bioassays.

TEST: forced exposure soil contact bioassays	Mortality of <i>Linepithema humile</i>	Mortality of <i>Pogonomymex occidentalis</i>
Invention	90%	40%
Takagi	4%	0%

Tests of the two compounds were also carried out against termites (page 7 of the Declaration). The activity of the two compounds was evaluated via forced exposure soil

contact bioassays. The following table summarizes the results obtained in the forced exposure soil contact bioassays.

TEST: forced exposure soil contact bioassays	Mortality of <i>Reticulitermes flavipes</i>	Mortality of <i>Reticulitermes virginicus</i>
Invention	85%	90%
Takagi	25%	50%

The behavior of the treated termites was studied through tunneling assays (page 8 of the Declaration). The following table summarizes the results obtained in the tunneling assays.

TEST: tunneling assays	Mortality of <i>Reticulitermes flavipes</i>
Invention	100%
Takagi	25%

Finally, the activity of the two compounds was evaluated in bait assays (pages 8 – 9 of the Declaration).

TEST: bait assays	Mortality of <i>Reticulitermes flavipes</i>	Mortality of <i>Reticulitermes virginicus</i>
Invention	100%	95%
Takagi	27%	9%

The nonobviousness of the claimed invention seems clear in light of these unexpected results. Appellants respectfully submit that claims 1, 10, 13 – 47 are not obvious over Stefferud, and Takagi, and request that the present rejection be reversed.

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Respectfully submitted,
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